App No.: 09'258600 Inventor: Daḥa M. Fowlkes, et al. Docket No.: CP!-012CP4DV Title: YEAST CELLS ENGINEERED TO PRODUCE, etc. ij Sheet 1 of 13 1/13 FIG. 1A Synthesis, Release, and Targets of Mating Pheromones growth -STE3p growth a factor - STE6p - a factor -STE19p KEX1p - alpha factor - alpha factor STE14p STE13p R RAM3p KEX2p RAM1p R RAM2p MFalpha1p MFalpha2p MFa1p MFa2p FIG. 1B Stage 1 growth STE2p growth KEX1p - alpha factor - alpha factor a factor - STE6p -a factor -R STE14p STE13p RAM3p R MATalpha **MATa** KEX2p ste3 ste2 RAM1p far 1 RAM2p far 1 FUS1::HIS3 MFalpha1p FUS1::HIS3 MFa1p MFa2p sst2 MFalpha2p

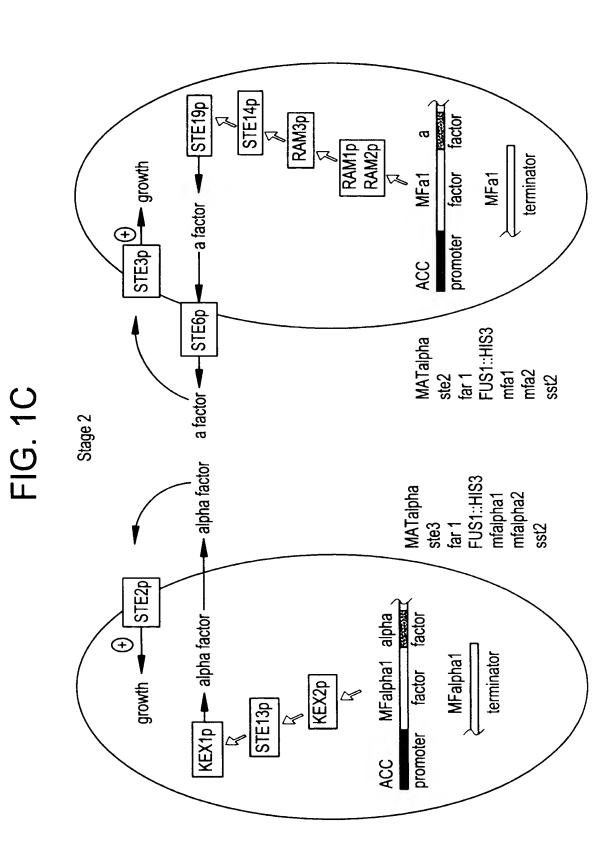
sst2

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Sheet 3 of 13 3/13 STE14p STE19p random RAM3p RAM1p RAM2p terminator growth MFa1 factor MFa1 famesylated — 12mer  $\oplus$ promoter STE3p ACC STE6p MATa ste2 far 1 FUS1::HIS3 mfa1 mfa1 sst2 farnesylated 12mer Stage 3 MATalpha ste3 far 1 FUS1::HIS3 random 13mer mfalpha1 mfalpha2 sst2 STE2p random 13mer-13mer MFalpha1 random,  $\oplus$ terminator MFalpha1 factor growth KEX2p STE13p KEX1p promoter

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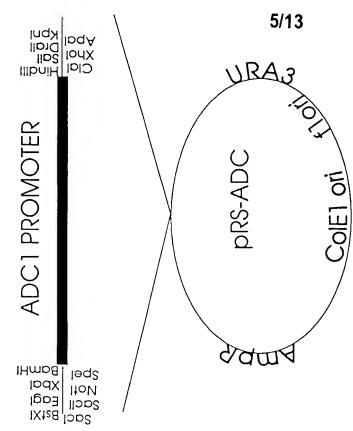
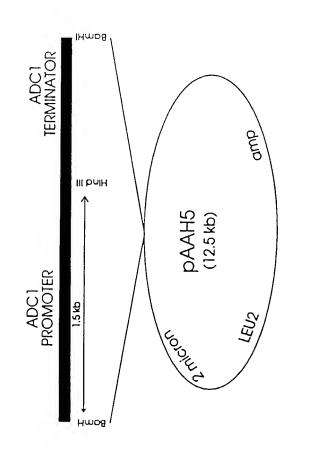


FIG. 3



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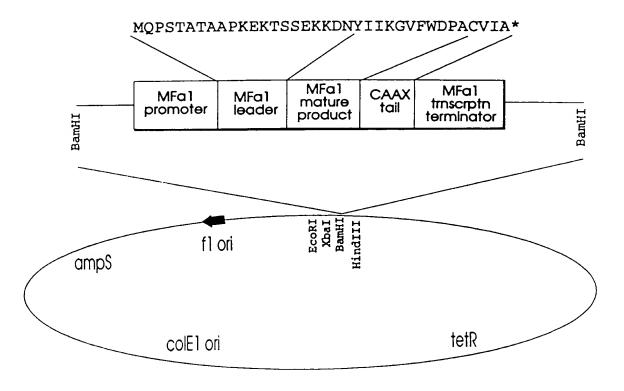
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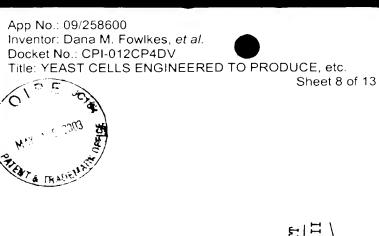
Title: YEAST CELLS ENGINEERED TO PRODUCE, etc.

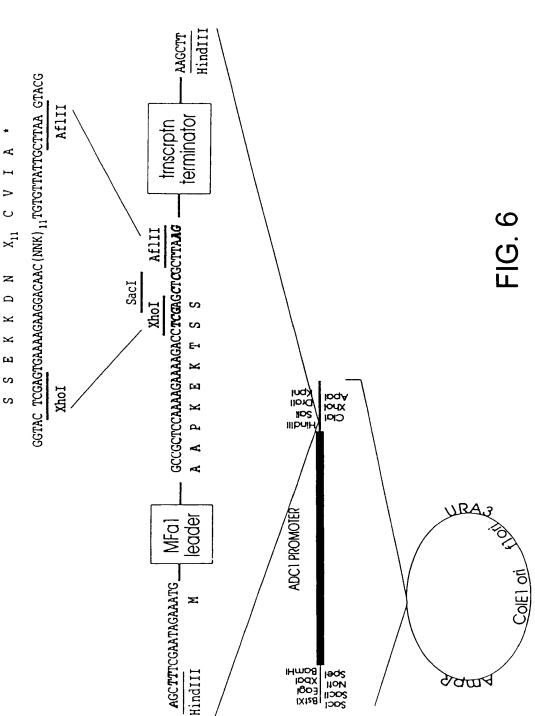
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FIG. 5



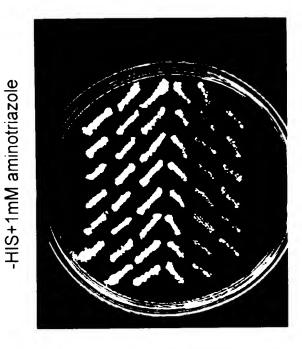




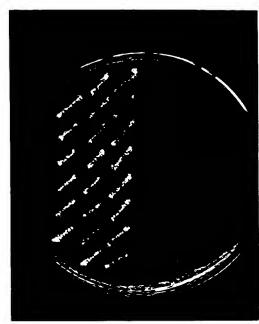
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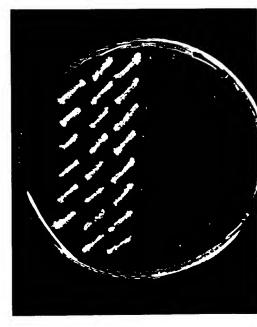
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-HIS+40mM aminotriazole



-HIS+20mM aminotriazole



+ insert vector

empty vector

vector + insert

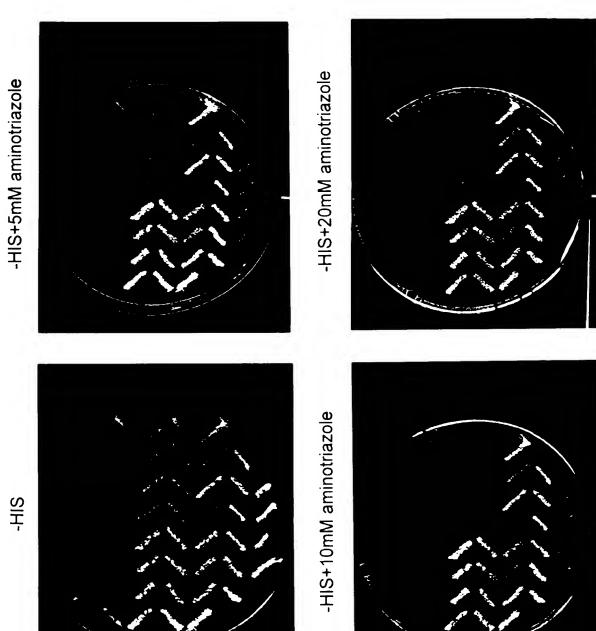
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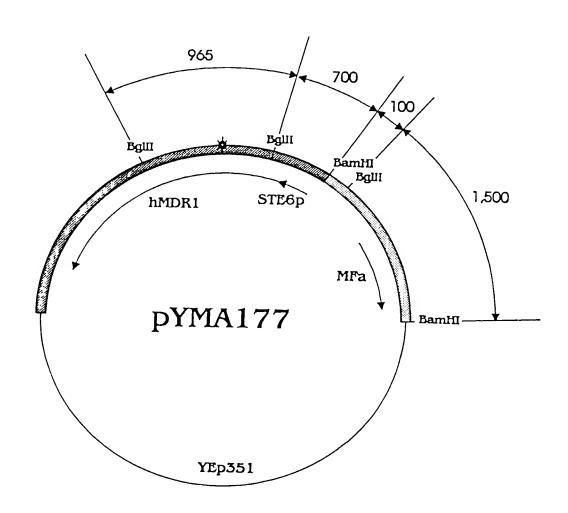
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FIG. 9

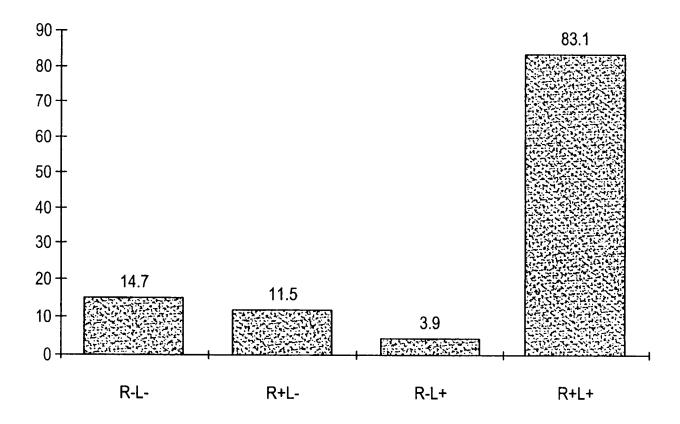


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FIG. 10



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GPA1

 $G\alpha S$ 

41- GαS

SGS

41-SGS